



US005982378A

United States Patent [19]
Kato

[11] **Patent Number:** **5,982,378**
[45] **Date of Patent:** **Nov. 9, 1999**

[54] **SYSTEM AND METHOD FOR MODELING A THREE DIMENSIONAL OBJECT**

[75] Inventor: **Saul Kato**, Palo Alto, Calif.

[73] Assignee: **Spatial Technology Inc.**, Boulder, Colo.

[21] Appl. No.: **08/691,646**

[22] Filed: **Aug. 2, 1996**

[51] Int. Cl.⁶ **G06T 17/40**

[52] U.S. Cl. **345/430**

[58] Field of Search **345/425, 426, 345/430, 434, 419**

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,129,014	7/1992	Bloomberg	382/48
5,490,240	2/1996	Foran et al.	345/430
5,495,535	2/1996	Smilansky et al.	382/145
5,581,276	12/1996	Cipolla et al.	345/435 X
5,592,597	1/1997	Kiss	345/419
5,745,667	4/1998	Kawase et al.	345/430
5,793,372	8/1998	Binns et al.	345/430
5,841,441	11/1998	Smith	345/430

OTHER PUBLICATIONS

Litwinowicz et al., Efficient Techniques for Interactive Texture Placement, Computer Graphics, pp. 119-122, Aug. 1994.

Pederson, Decorating Implicit Surfaces, Computer Graphics, pp. 291-300, Aug. 1995.

Breen et al., Predicting the Drape of Woven Cloth Using Interacting Particles, Computer Graphics, pp. 365-372, Aug. 1994.

Primary Examiner—Anton Fetting

Attorney, Agent, or Firm—Gray Cary Ware & Freidenrich

[57] **ABSTRACT**

A system for modeling a three dimensional object on a computer system is provided, the system having means for capturing data from an input device, the data representing various points on the surface of the object, means for generating from said captured data a three dimensional model of said object that has first distinct features at predetermined locations on the model, and means for applying a texture map onto said model, the texture having second distinct features at predetermined locations that correspond to the first distinct features of the model, so that a textured model is generated wherein the first distinct features of the texture map are located at approximately the same location as the second distinct features of the model. A method of modeling a three dimensional object is also provided. In addition, a method for mapping a texture map having first distinct features at predetermined locations onto a three dimensional model of an object in a computer system, the model having second distinct features at predetermined locations is provided.

10 Claims, 7 Drawing Sheets

